CLAIMS

1. A rotary fluid machine comprising

a rotation mechanism (**20**) including:

a cylinder (**21**) having an annular cylinder chamber (**50**);

an annular piston (**22**) which is contained in the cylinder chamber (**50**) to be eccentric to the cylinder (**21**) and divides the cylinder chamber (**50**) into an outer working chamber (**51**) and an inner working chamber (**52**); and

a blade (**23**) which is arranged in the cylinder chamber (**50**) to divide each of the working chambers into a high pressure region and a low pressure region, the cylinder (**21**) and the piston (**22**) making relative rotations, wherein

the width **T1** of the cylinder chamber (**50**) is varied along the circumference of the cylinder chamber (**50**) such that the gap between the wall surface of the cylinder (**21**) and the wall surface of the piston (**22**) is kept to a predetermined value during the rotations.

2. A rotary fluid machine comprising

a rotation mechanism (**20**) including:

a cylinder (**21**) having an annular cylinder chamber (**50**);

an annular piston (**22**) which is contained in the cylinder chamber (**50**) to be eccentric to the cylinder (**21**) and divides the cylinder chamber (**50**) into an outer working chamber (**51**) and an inner working chamber (**52**); and

a blade (**23**) which is arranged in the cylinder chamber (**50**) to divide each of the working chambers into a high pressure region and a low pressure region, the cylinder (**21**) and the piston (**22**) making relative rotations without spinning by themselves, wherein

the width **T2** of the piston (**22**) is varied along the circumference of the piston (**22**) such that the gap between the wall surface of the cylinder (**21**) and the wall surface of the piston (**22**) is kept to a predetermined value during the rotations.

3. The rotary fluid machine according to claim 2, wherein

the width **T1** of the cylinder chamber **(50)** is varied along the circumference of the cylinder chamber **(50)** such that the gap between the wall surface of the cylinder **(21)** and the wall surface of the piston **(22)** is kept to a predetermined value during the rotations.

4. The rotary fluid machine according to claim 1 or 3, wherein

regarding the center line of the blade **(23)** as a starting point of the circumference of the cylinder chamber **(50)**, the width **T1** of part of the cylinder chamber **(50)** ranging from the starting point to a point at a rotation angle of 180° from the starting point is large and the width **T1** of the other part of the cylinder chamber **(50)** ranging from the 180° point to a point at a rotation angle less than 360° from the starting point is small.

5. The rotary fluid machine according to claim 4, wherein

the center of the inner circumference of the cylinder chamber **(50)** is deviated from the center of the outer circumference of the cylinder chamber **(50)** when viewed in plan.

6. The rotary fluid machine according to claim 1 or 3, wherein

the cylinder chamber **(50)** is divided into four regions along the circumference thereof such that the cylinder chamber **(50)** has wide regions **(Z1, Z3)** and narrow regions **(Z2, Z4)** formed in a continuous and alternate manner.

7. The rotary fluid machine according to claim 2 or 3, wherein

the piston **(22)** and the blade **(23)** make relative swings at a predetermined swing center and

regarding the swing center of the blade **(23)** and the piston **(22)** as a starting point of the circumference of the piston **(22)**, the width **T2** of part of the piston **(22)** ranging

from the starting point to a point at a rotation angle of 180° from the starting point is small and the width **T2** of the other part of the piston **(22)** ranging from the 180° point to a point at a rotation angle of 360° from the starting point is large.

8. The rotary fluid machine according to claim 7, wherein

the center of the inner circumference of the piston **(22)** is deviated from the center of the outer circumference of the piston **(22)** when viewed in plan.

9. The rotary fluid machine according to claim 2 or 3, wherein

the piston **(22)** and the blade **(23)** make relative swings at a predetermined swing center and

the piston **(22)** is divided into four regions along the circumference thereof such that the piston **(22)** has narrow regions **(W1, W3)** and wide regions **(W2, W4)** formed in a continuous and alternate manner.

10. The rotary fluid machine according to claim 1, wherein

part of the annular piston **(22)** of the rotation mechanism **(20)** is cut off such that the piston **(22)** is C-shaped,

the blade **(23)** of the rotation mechanism **(20)** extends from the inner wall surface to the outer wall surface of the cylinder chamber **(50)** and passes through the cut-off portion of the piston **(22)** and

a swing bushing is provided in the cut-off portion of the piston **(22)** to contact the piston **(22)** and the blade **(23)** via the surfaces thereof such that the blade **(23)** freely reciprocates and the blade **(23)** and the piston **(22)** make relative swings.